32. (new) A method for the differentiated examination of various structures in a biological preparation using a microscope, said method comprising the steps of:
    A) assigning particles with a specific diameter and specific characteristics to said structures; and
    B) detecting said structures by detecting said particles specifically bound in or on said structures of said preparation using light that acts on said particles, said particles possessing constant characteristics independent of the time of irradiation by said light.

33. (new) The method as recited in Claim 32, wherein said particles are detected by selecting a wavelength of suitable light being as a function of said diameter and of said specific characteristics of the particles such that said particles are detected on the basis of a Mie scatter occurring on said particles.

34. (new) The method as recited in Claim 32, wherein said particles are detected by selecting a wavelength of a suitable light as a function of said diameter and of said specific characteristics of said particles such that said particles are detected on the basis of a plasmon signal occurring on said particles.

35. (new) The method as recited in Claim 33, wherein said wavelength of said light is larger than, or is approximately equal to, said diameter of said particles.

36. (new) The method as recited in Claim 32, wherein areas of said preparation to be differentiated are provided with particles of various diameters, so that said areas to be differentiated are detected simultaneously or successively by means of suitable light of various wavelengths.

37. (new) The method as recited in Claim 32, wherein said particles are metallic particles or particles metalized on the surface.

38. (new) The method as recited in Claim 37, wherein said particles are formed as ellipsoids or beads.

39. (new) The method as recited in Claim 33, wherein said particles are detected through the Mie-reflexes occurring there in transmission microscope mode.

40. (new) The method as recited in Claim 39, wherein said microscope is a conventional polarization transmission microscope or a confocal polarization transmission microscope.

41. (new) The method as recited in Claim 33, wherein the specific detection of the particles is achieved via the Mie-reflexes occurring there in the reflection microscope mode.

42. (new) The method as recited in Claim 10, wherein said microscope is a conventional polarization reflection microscope or a confocal polarization reflection microscope.

43. (new) The method as recited in Claim 32, wherein said light is produced using a high-pressure lamp as a light source.

44. (new) The method as recited in claim 43, wherein said light source comprises means for wavelength selection and polarization.

45. (new) The method as recited in Claim 32, wherein said light is produced using a laser as a light source, said laser emitting polarized light of one wavelength.

46. (new) The method as recited in Claim 32, wherein said light is produced using an optical parametric oscillator as a light source, the wavelength of said light being variable using said optical parametric oscillator, whereby a maximum Mie-signal for a specific particle type can be measured.

47. (new) The method as recited in Claim 32, wherein said light is produced using a laser as a light source, said laser emitting polarized light of several different wavelengths, and means for selecting wavelengths is connected in series to said laser.

48. (new) The method as recited in Claim 47, wherein said means for selecting wavelengths is integrally connected in to said laser.

49. (new) The method as recited in Claim 47, wherein said means for selecting wavelengths is integrally connected in to said laser.

50. (new) The method as recited in Claim 32, further comprising the steps of:
C) recording a detection image and a conventional transmitted light microscopic image using said microscope; and
D) evaluating said recorded images using digital image processing;
whereby said biological preparation is analyzed.

51. (new) The method as recited in Claim 32, further comprising the steps of:
C) recording a detection image and a conventional reflected light microscopic image using said microscope; and
D) evaluating said recorded images using digital image processing;
whereby said biological preparation is analyzed.

52. (new) The method as recited in Claim 32, further comprising the steps of:
C) recording a detection image, a conventional transmitted light microscopic image, and a conventional reflected light microscopic image using said microscope; and
D) evaluating said recorded images using digital image processing;
whereby said biological preparation is analyzed.